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NT-PROBNP AND HSTNT IMPROVE CARDIOVASCULAR RISK PREDICTION IN PATIENTS WITH TYPE 2 DIABETES MELLITUS, CHRONIC KIDNEY OR CARDIOVASCULAR DISEASE OR BOTH

Moderated Poster Contributions
Hall C
Saturday, March 29, 2014, 4:00 p.m.-4:15 p.m.

Session Title: Prevention: Risk Predictors, Subclinical Atherosclerosis, and Resistent Hypertension
Abstract Category: 20. Prevention: Clinical
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Authors: *Pardeep Jhund, Brian Claggett, Marc Pfeffer, Rhonda Bentley-Lewis, Barry M. Brenner, Patrick Brunel, Nishi Chaturvedi, Akshay Desai, Steven Haffner, Hans-Henrik Parving, Margaret Prescott, Scott Solomon, Dick De Zeeuw, John McMurray, Brigham and Womens Hospital, Boston, MA, USA*

Background: Although patients with type 2 diabetes (T2DM) are at high risk of cardiovascular (CV) events, the factors associated with risk are unclear. We examined the predictors of CV mortality and morbidity in a high risk population with T2DM (history of chronic kidney or CV disease or both) in the Aliskiren Trial in Type 2 Diabetes Using Cardiorenal Endpoints (ALTITUDE).

Methods: In 8415 patients with complete data, we identified the predictors of the composite of CV death, MI, stroke, heart failure or resuscitated cardiac arrest (N=1129), adjusting for randomized therapy in a Cox model. The incremental information from N-terminal proBNP (NT-proBNP) and high-sensitivity troponin T (hsTnT) (available in 5598) was assessed by C statistics and net reclassification improvement (NRI).

Results: The strongest independent predictors of CV events are shown in the table, others included were, history of stroke, atrial fibrillation, urine albumin creatinine ratio, diastolic BP, eGFR, smoking, heart rate, insulin use, sex and ECG variables. The C statistic was 0.717. NT-proBNP was elevated above the upper limit of normal in 3399(61%) and hsTnT in 3146(56%). After adding cardiac biomarkers the C statistic increased to 0.763 and NRI was 26% (95% CI 20-30%).

Conclusions: In high risk patients with T2DM, cardiac biomarkers of myocardial stress or injury enhance CV risk prediction over most traditional clinical variables.

Strongest predictors of CV events in patients with T2DM

Variable	HR(95%CI)prior to the addition of cardiac biomarkers	P prior to the addition of cardiac biomarkers	Chi square prior to the addition of cardiac biomarkers	HR(95%CI)after the addition of cardiac biomarkers	P after the addition of cardiac biomarkers	Chi square after the addition of cardiac biomarkers
History of heart failure	2.26(1.94-2.63)	<0.001	111.1	1.79(1.60-1.83)	<0.001	32.15
Serum albumin (per 1g/L increase)	0.93(0.92-0.95)	<0.001	75.5	0.98(0.96-1.00)	0.039	4.2
Age (per year increase)	1.03(1.02-1.04)	<0.001	47.4	1.02(1.01-1.03)	<0.001	15.6
History of CHD	1.49(1.30-1.72)	<0.001	32.3	1.12(0.95-1.32)	0.18	1.9
LDL (per 1mmol/L increase)	1.17(1.10-1.24)	<0.001	27.8	1.23(1.52-1.74)	<0.001	34.8
HbA1c (per 1% increase)	1.07(1.03-1.11)	<0.001	25.6	1.10(1.05-1.15)	<0.001	16.9
Systolic BP (per 10mmHg increase)	1.10(1.06-1.15)	<0.001	23.9	1.07(1.01-1.12)	0.01	4.2
log NT-proBNP (per 1 log unit increase)	NA	NA	NA	1.62(1.52-1.74)	<0.001	189.1
log hsTnT (per 1 log unit increase)	NA	NA	NA	1.31(1.18-1.47)	<0.001	23.6